



MeBoP

Middle Eastern Biology  
of Parasitism

University Hospital Center of Constantine  
laboratory of medical parasitology-mycology  
University of Constantine 3

Middle Eastern Biology of Parasitism, University of Bern  
Switzerland, 23-05 August

Dr. Sofiane Mizi Allaoua

Resident pharmacist

# Location of Algeria in World

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# University Hospital center of Constantine Laboratory of parasitology-mycology

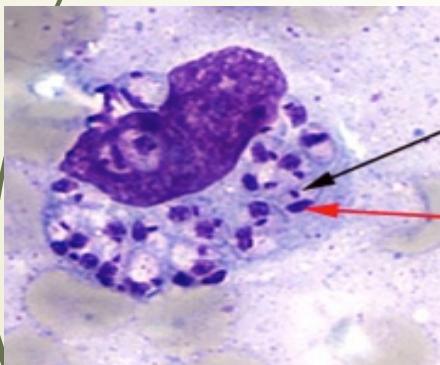


## Presentation of the laboratory

The Laboratory performs three main functions: research, teaching, and hospital diagnosis in Parasitology-Mycology

The team work is composed of many professors, Assistant professors, residents and many technicians

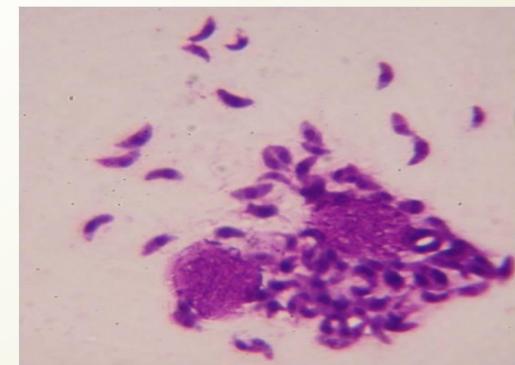
Conduct and support research into the epidemiology, diagnosis, treatment, and prevention of infectious diseases particularly those are endemic in Algeria



**Leishmaniasis**



**Hydatidosis**



**Toxoplasmosis**

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## Pr T.Moulahem and Dr I.Aissaoui



Sweet  
Selfie

## the project's objectives

1

Epidemiological  
study on the  
hydatid cyst in  
children in  
eastern Algeria

2

scolicidal  
effects of some  
natural drugs  
in vitro

# 1. Epidemiological study on the hydatid cyst in children in eastern Algeria, in collaboration with the pediatric surgery department





*Our Aim*



The main objectives of this study is:

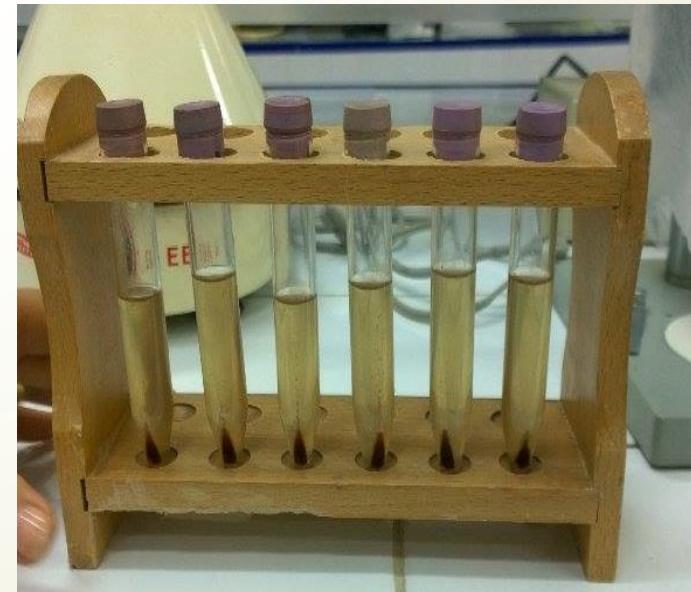
- ❖ to clarify the epidemiological aspects of this disease and to compare it with other national and international studies.
- ❖ The fertility rate of hydatid cysts.
- ❖ The viability of protoscoleces.

## Reception of hydatid cysts from pediatric surgery

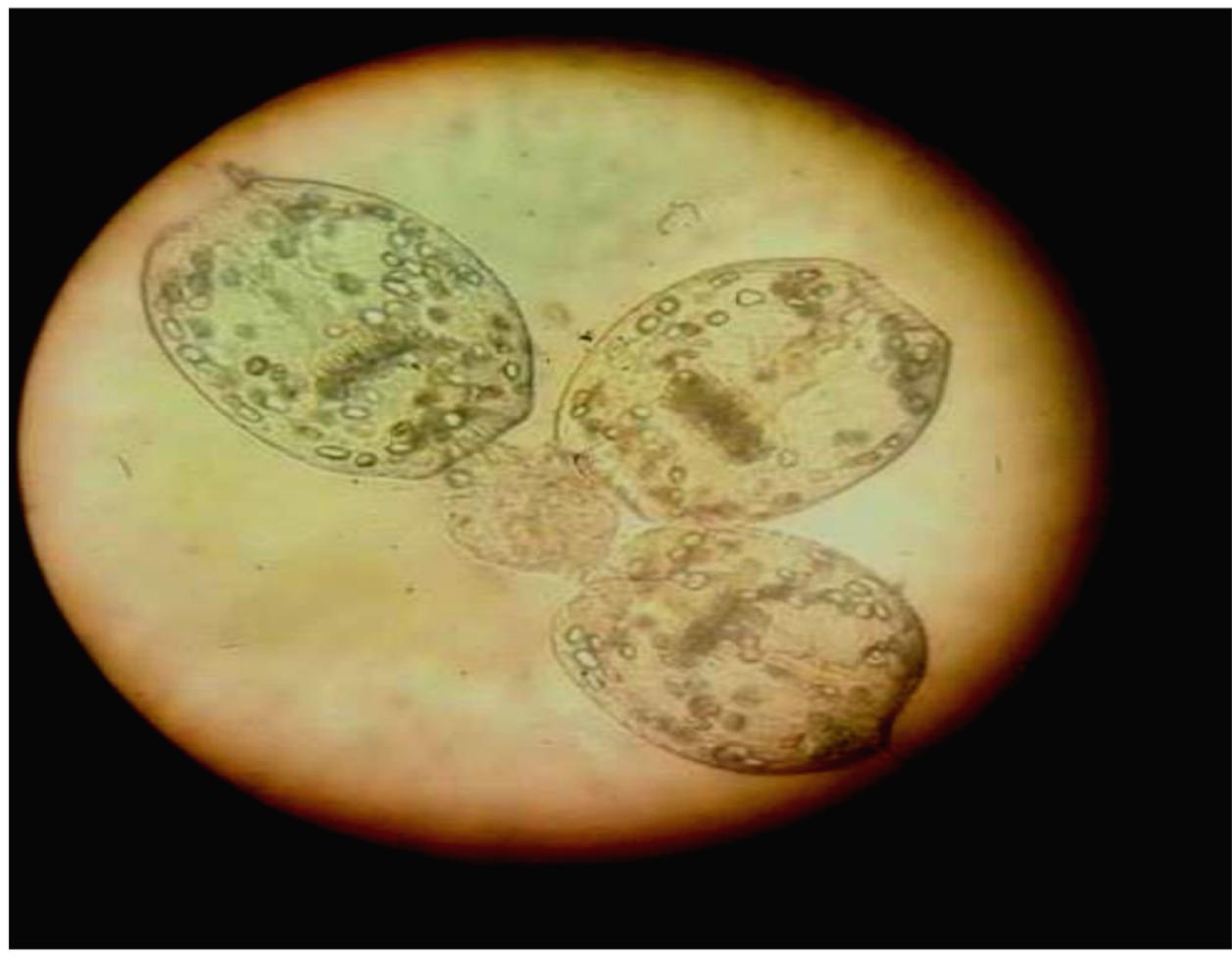


# Collection of protoscoleces

10



## Direct examination under a light microscope

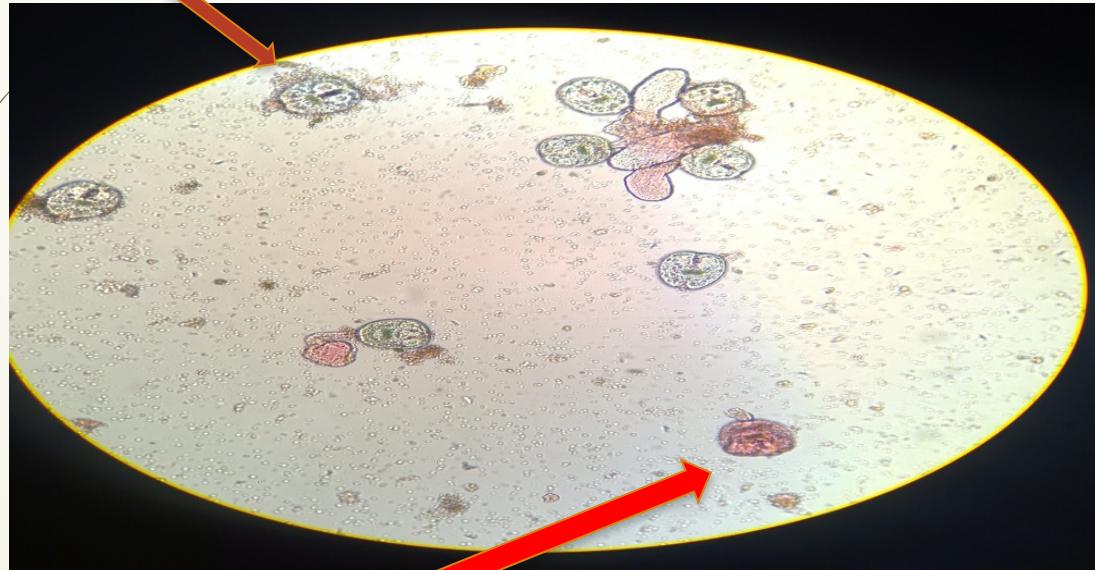


**Presence of protoscoleces= fertile cyst**

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# Viability test

Incoloured  
protoscoleces: **Viable**



Coloured  
protoscoleces: **Dead**

# RESULTS

The lung is the most affected organ (45%), followed by the liver (33%)

The most affected age groups in our series range from 6 to 9 years and 11 to 14 years

83% of the cysts were fertile and the collected protoscoleces were viable

**These results corroborate the results of other studies done in Algeria**

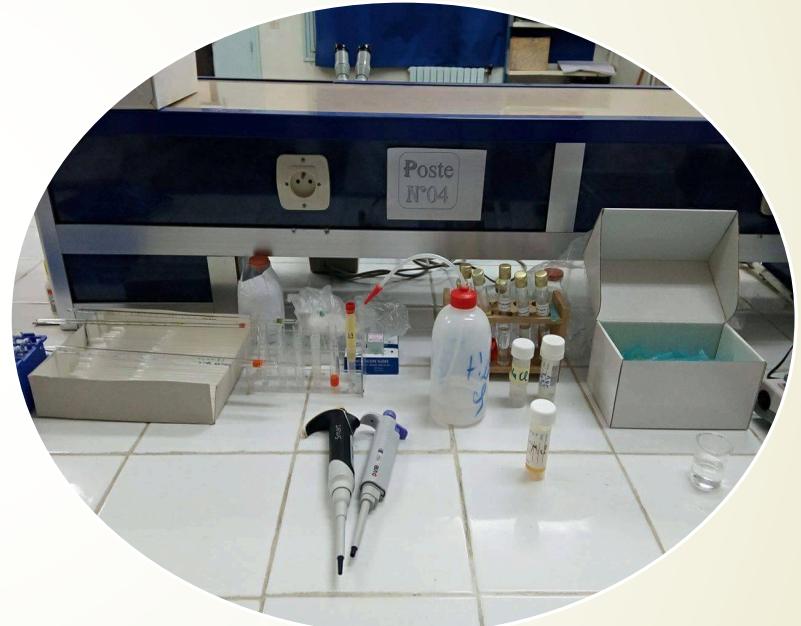
(Zait H, et al.. 2013)

(Zait H, et al.. 2014)

## 2. Evaluation of scolicidal activity of some drugs



1.Preparation of drug extracts  
laboratory of pharmacognosy



2.Test of the scolicidal effect of  
drugs extracts  
Laboratory of parasitology



*Our Aim*



## chemical agents

**Find less harmful and more effective scolicidal solutions  
for use in hydatid cyst surgery**

# Drugs tested



Ginger



Garlic



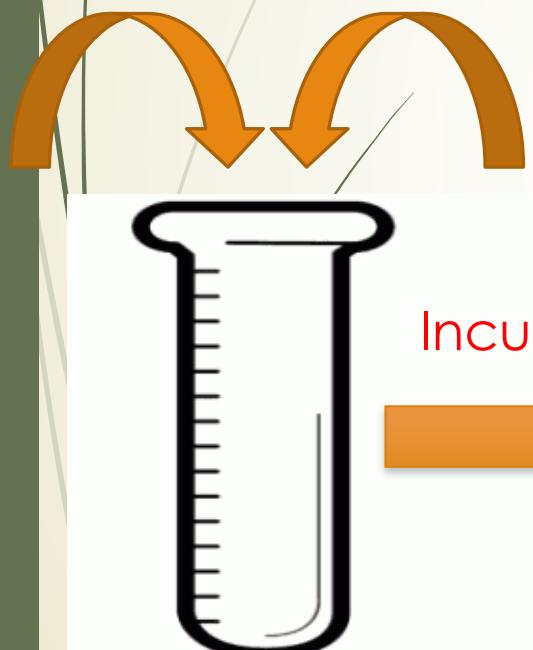
Honey



pomegranate

# Effectiveness of extracts on protoscolices

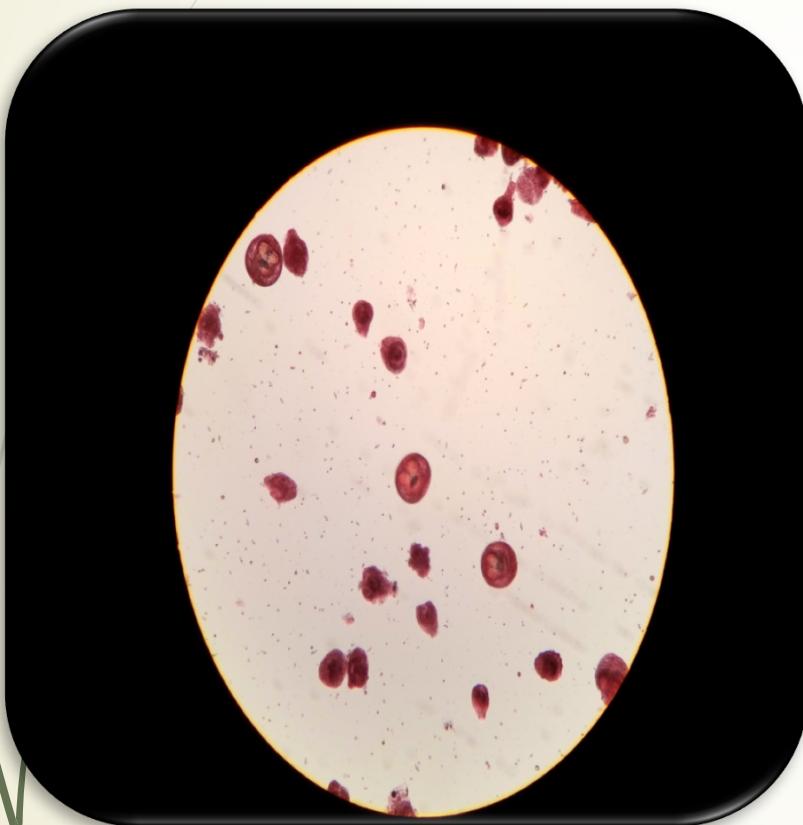
PROTOSCOLICES SOLUTION TO BE TESTED



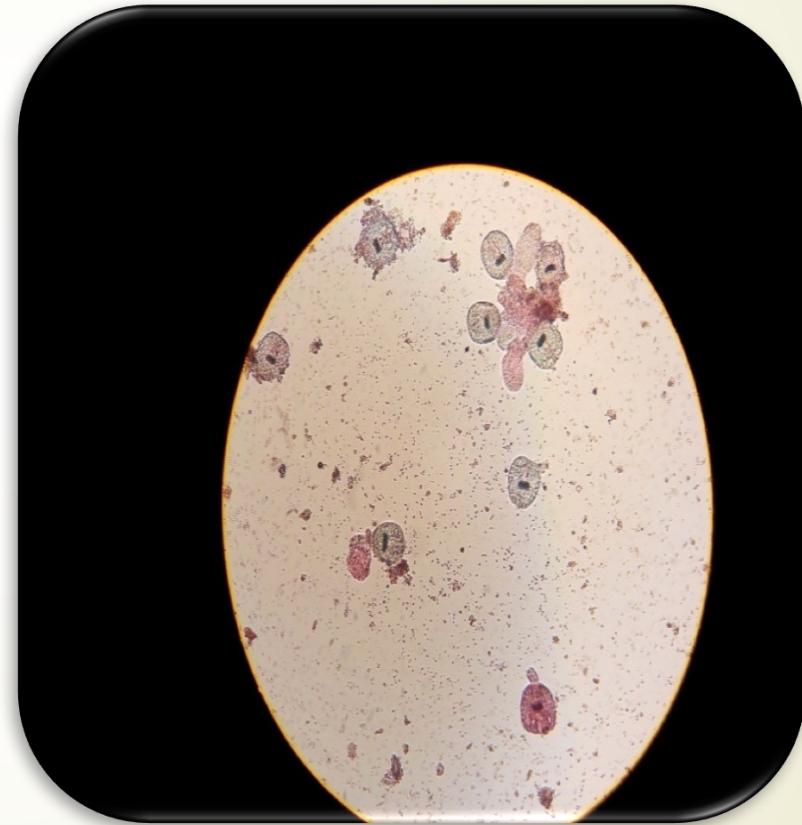
Incubation at 37°C



# Viability test



Coulored Dead



Incouloured Viable



RESULTS

# pomegranate

| Concentrations  | test    | % of mortality after exposure |        |
|-----------------|---------|-------------------------------|--------|
|                 |         | 10 min                        | 30 min |
| <b>10 mg/ml</b> | 1       | 96.1                          | 95.5   |
|                 | 2       | 97.7                          | 97.1   |
|                 | average | 96.9                          | 96.3   |
| <b>30 mg/ml</b> | 1       | 100                           | 100    |
|                 | 2       | 100                           | 100    |
|                 | average | 100                           | 100    |
| <b>50 mg/ml</b> | 1       | 100                           | 100    |
|                 | 2       | 99.20                         | 100    |
|                 | average | 99.6                          | 100    |

# Ginger

**Concentrations Tests % of mortality after exposure**

|                 |         | 10 min | 30 min |
|-----------------|---------|--------|--------|
| <b>5 mg/ml</b>  | 1       | 100    | 100    |
|                 | 2       | 100    | 100    |
|                 | Average | 100    | 100    |
| <b>10 mg/ml</b> | 1       | 100    | 100    |
|                 | 2       | 100    | 100    |
|                 | Average | 100    | 100    |
| <b>30 mg/ml</b> | 1       | 100    | 100    |
|                 | 2       | 100    | 100    |
|                 | Average | 100    | 100    |

## collaboration skill/resources to promote the project



- ❖ The characterization of the species/genotypes responsible for human hydatidosis in Est of Algeria in order to adapt the measures of control and prevention against this parasitic disease.
- ❖ Researching a link between the species/genotypes and: the cyst's localization, The fertility rate of cysts, multiple localizations, risk of recurrence, etc.

## collaboration skill/resources to promote the project

### Second study

- ❖ evaluated the safety of ginger's and pomegranate's extracts for pharmaceutical purposes as a new scolicidal agent in hydatid surgery .
- ❖ determined in vivo the efficacy of this extracts using an animal model of hydatid infection.
- ❖ Identify and isolate the active compounds responsible for the scolicidal effect.

## Difficulties of research in Algeria

- ❖ The centralization of research facilities and new diagnostic techniques in the capital Algiers.
- ❖ Lack of funding support to the parasitological projects or to have access to many materials/techniques such as sequencing, animal models, cellular biology,...
- ❖ Underestimate the great burden of parasitic diseases on public health by the sanitary authorities
- ❖ Low research collaboration with other countries



**THANK YOU**  
for your  
**ATTENTION!**